

REMARKS

In the Office Action, the Examiner rejected Claims 1-16, which are all of the pending claims, over the prior art, principally U.S. Patent 6,211,849 (Sasaki, et al.). Claim 1 was rejected under 35 U.S.C. §102 as being fully anticipated by Sasaki, et al, and the other claims were rejected under 35 U.S.C. §103 as being unpatentable over Sasaki, et al in combination with one or more other references.

More specifically, Claim 2 was rejected over Sasaki, et al in view of U.S. Patent 5,751,261 (Zavracky, et al); Claim 3 was rejected over Sasaki, et al in view of U.S. Patent 5,623,519 (Babcock, et al); Claims 4 and 5 were rejected over Sasaki, et al. in view of U.S. Patent 5,801,674 (Shimizu); and Claims 6 and 7 were rejected over Sasaki, et al in view of Zavracky, et al and further in view of Babcock, et al. Claim 8 was rejected over Sasaki, et al, Zavracky et al, Babcock, et al and U.S. Patent 5,974,464 (Shin, et al); Claim 9 was rejected over Sasaki, et al in view of Zavracky, et al, Babcock, et al and U.S. Patent 5,825,777 (Komarek, et al); and Claims 10-16 were rejected over Shimizu in view of Sasaki, et al. and Babcock, et al.

Applicants are herein amending independent Claims 1, 4, 6, 10, 12 and 14 to better distinguish over the prior art. For the reasons set forth below, Applicants believe that Claims 1-16, as presented herewith, patentably distinguish over the prior art and are allowable; and the Examiner is, accordingly, respectfully requested to reconsider and to withdraw the above-identified rejections of Claims 1-16, and to allow these claims.

The present invention, generally, relates to a liquid crystal display device having an improved driver interface. More specifically, in this driver interface, the individual driver ICs are connected together in series, either by the video signal line or the transmission line. In use, video signal data are transmitted to the driver ICs over these lines. In order to help ensure that

the video signals are applied to the appropriate electrodes, each driver IC also includes a controller that may be used to generate a mask signal that masks the data output from the driver IC on the signal or transmission lines.

Sasaki, et al and Shimizu also disclose liquid crystal display devices having plurality of driver ICs. In Sasaki, et al, the driver ICs are connected in series via intermodule wirings 10, which are used to transmit pixel, clock and control signals. In Shimizu, the driver ICs are connected in parallel to the signal and clock lines.

Neither of these references, however, discloses or suggests the use of the above discussed mask signal of this invention.

In the Office Action, the Examiner noted that Sasaki, et al does not provide a masking signal from an upstream driver to a downstream driver. The Examiner argued, however, that Shimizu does teach this feature, and in particular, the Examiner cited the ENABLE signal discussed in Shimizu from column 3, line 66 to column 4, line 43.

This enable signal of Shimizu is not the same as the masking signal of the present invention. For example, the enable signal of Shimizu causes the driver to begin to fetch data. In contrast, a mask does not cause, or prevent, the driver from fetching or trying to fetch data. Instead, a mask simply covers the signal data so that, fetched or not, the data do not affect the operation of the electrodes driven by the driver. Moreover, with the present invention, each driver generates a mask signal to mask its own output, while in Shimizu, the enable signal is transmitted to the next driver to cause that driver to begin to fetch data.

The use of the mask signal of the present invention is of utility for a number of reasons. For instance, this signal eliminates the need for the separate line used in Shimizu to conduct the mask signal to the next driver. Also, the use of the mask signal eliminates the need for the logic

used in Shimizu to detect and respond to the enable signal. These advantages, in turn, all help the present invention to achieve a primary goal of reducing the number of required IC interconnects.

The other references of record have been reviewed, and whether they are considered individually or in combination, these other references also fail to disclose or suggest the masking feature of this invention. Specifically, Zavracky, et al. was cited for its teaching of transferring a silicon substrate to a glass substrate, and Babcock, et al. was cited for its disclosure of synchronizing a serial stream of data. None of these references teach the principal of each driver IC generating a masking signal to mask video or signal data output from the driver.

Independent Claims 1, 4, 6, 10, 12 and 14 are herein being amended to describe this feature of the invention. In particular, Claims 1, 4, 6 and 10 are being amended to indicate the each driver IC includes a controller for generating a mask signal to mask data output from the driver, and Claims 12 and 14 are being amended to set forth the step of, each driver IC, selectively generating a mask signal to mask the video signal output from the driver.

Because of the above-discussed differences between Claims 1, 4, 6, 10, 12 and 14 and the prior art, and because of the advantages associated with those differences, these claims patentably distinguish over the prior art and are allowable. Claims 2 and 3 are dependent from Claim 1 and are allowable therewith; Claim 5 is dependent from, and is allowable with, Claim 4; and Claims 7-9 are dependent from Claim 6 and are allowable therewith. Likewise, Claim 11 is dependent from, and is allowable with, Claim 10; Claim 13 is dependent from Claim 12 and is allowable therewith; and Claims 15 and 16 are dependent from, and are allowable with, Claim 14. Accordingly, the Examiner is respectfully asked to reconsider and to withdraw the above-discussed rejections of Claims 1-16 under 35 U.S.C. §§102 and 103, and to allow these claims.

Every effort has been made to place this case in condition for allowance, a notice of which is requested. If the Examiner believes that a telephone conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully Submitted,

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